

## ABSTRACT OF THE DISCLOSURE

A position detection apparatus detecting a position of a mark similar to a template image from an input image has a calculation block. The calculation block includes phase difference calculation means and mark position detection means. The phase difference calculation means calculates a phase difference between a phase component of each frequency component when the template image is transformed into frequency components and a phase component for each frequency component when an input image is transformed into frequency components with a reference point being set at a predetermined position on the input image. The phase component difference calculated by the phase difference calculation means is transformed into a phase impulse response function, according to which the mark position detection means detects the position of the mark on the input image.